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OREGON FLORA NEWSLETTER

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Thea Cook and Ann Willyard: east meets west

by Rhoda Love

Kipling wrote "East is East and West is West and never the twain shall meet," but of course that was in another country. Here at the Herbarium in Corvallis, we have a happy conjunction of east and west in our first two full-time Flora Project employees. Thea Cook and Ann Willyard began work this fall as Faculty Research Assistants in the OSU Botany Department. Their jobs will emphasize training and supervision of student data base entry personnel and data base development. Support for the new positions comes from a recent Bureau of Land Management grant as well as Flora Project funds. There are several very interesting parallels in the lives of these two young women.

Ann Willyard comes to us from Redding California where she recently completed a Masters in Botany at California State University, Chico. Her Bachelors in Biology was earned at the University of California, Santa Cruz in 1974. During the intervening years, she worked as a

See Ann and Thea, page 2



Ann Willyard (left) and Thea Cook,
new Oregon Flora Project staff members.

Project news

by Scott Sundberg

The Flora project has seen a flurry of activity over the past few months, with progress in many areas. For the first time we have full-time project staff and it is making a difference!

We are making important advances in the Atlas project. Students are searching through the OSU Herbarium for Oregon county records and databasing specimen label information for one plant collection per county. These records, along with those from species lists we have recently received, are adding thousands of dots to our plant distribution maps. While adding new data, we are also checking previous records for accuracy. Clay Gautier has recently tested the online Atlas by adding tens of thousands of records from the database of species lists. Happily we can report that the Java program he wrote is up to the task.

We recently mailed species lists for each Atlas block to the Regional Coordinators and are distributing lists for various county-level projects. Over the next few months we will be contacting curators of small herbaria throughout the state in search of records not represented in the OSU Herbarium.

Work on the Photo Gallery is moving forward. With the help of Don Roberts, who has been volunteering on a regular basis, we have entered data on most Oregon slides in the OSU Herbarium slide collection. Several people have offered the use of their photographs. We have been working out some of the technical aspects of the project, such as scanning resolution, documenting database parameters, and copyrights. In the next few weeks we will concentrate on other details of the project.

The rare plant guide prototype is in preparation. We have settled on the list of species to feature. A preliminary design for fact sheets has been completed and we are looking into producing them from database output.

The Checklist is steadily progressing. We have received advanced draft treatments for 59 percent of the taxa. Several species of escaped cultivated plants have recently been added. Approximately 19.6 percent of Oregon's 4460 taxa are exotic.

A prime focus will now be online multiple-entry identification keys, including designs of the morphology database and the user interface. In short, progress is being made toward meeting long-term goals of the Flora project. ✿

programmer/analyst for both business and scientific applications, and pursued botany as a side interest while raising a family. Developing and implementing computer systems and databases to manage many different types of information have been her focus for about 25 years, and she considers botany to be the most interesting database subject imaginable.

For her Master's research, Ann returned to the laboratory to learn modern molecular techniques to address a genetics question in western white pine and sugar pine. The topic involved trying to locate the genes that confer major resistance to white pine blister rust (WPBR) in these two closely related species of pine. The research was conducted at the Institute of Forest Genetics (IFG), a research branch of the USDA Forest Service, where much of the work concerning this devastating introduced fungal disease has been done. The presence of similar disease resistance genes to introduced pathogens in related pine species is of great interest in the study of conifer evolution as well as for planning for the development of resistant tree lineages. Although the pine genome is extremely large,

molecular markers are known in sugar pine near the resistance gene, and Ann's results do not support the resistance gene being located near homologous markers in western white pine. This leaves open the possibility that the gene in western white pine is not homologous to the similar gene in sugar pine (i.e., they may have arisen separately). Other researchers at IFG are pursuing this subject and Ann hopes to publish joint results next year.

Thea Cook, a native of New York State, graduated from the University of New Hampshire in 1990 with a B.A. in Botany and Plant Pathology. Her primary interests are in taxonomy, ecology and conservation, which she has pursued through her career and coursework ever since. Upon graduation, Thea worked on projects researching control of *Myriophyllum spicatum* (Eurasian water milfoil) an invasive aquatic in the Northeastern U.S., and also on a long term ecological research project to understand forest nitrogen cycling as it is affected by additional nitrogen deposited by acid rain. She then moved to Paraguay where she spent two years working with farmers in the buffer zone of a national park to introduce agroforestry techniques and to develop and teach an environmental education curriculum.

Soon after returning from South America, Thea began working with the Latin America Division of The Nature Conservancy on the botany team, where she developed skills in plant taxonomy and database management. There, her primary project was to gather information on distribution, abundance and commercial importance of timber species. Since the network of protected areas in Latin America provides a viable gene bank for future commercial productivity of these timbers, this information would be used to find gaps in the network to hone future conservation efforts.

It is clear from her background that Ann Willyard, too, has a strong interest in conservation of forest ecosystems. During her five years working in the forestry department of Sierra Pacific Industries, a major California timber company, she developed a program to address the effects of timber management activities on a number of species. Program components included developing field guide pages for targeted species, training foresters to identify species, beginning a species richness study in a before-and-after disturbance framework in the Sierra Nevada, and writing a proposal to study the soil and disturbance patterns of a suite of species that grow in serpentine soils in the Klamath Mountains. Lots of days spent surveying and collecting in this fascinating setting were a wonderful opportunity.

After almost five years at The Nature Conservancy in the Washington, DC area, Thea and her husband relocated to Eugene last April. One of her first weekends in Oregon was spent taking a native plant identification workshop given by Rhoda Love, who then introduced her to the Oregon Flora Project with a day at the herbarium in Corvallis. Thea's 2001 field season was spent in the Fremont National Forest (in south central Oregon) surveying flora of riparian areas, mapping ecological types, and testing a new key to determine ecological condition. Depending on the

The Oregon Flora Newsletter is published three times a year by the Oregon Flora Project and the Oregon State University Herbarium. The Editor is Rhoda Love and the Production Assistant is Miko Nadel.

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Adelbert von Chamisso and botanical orthography

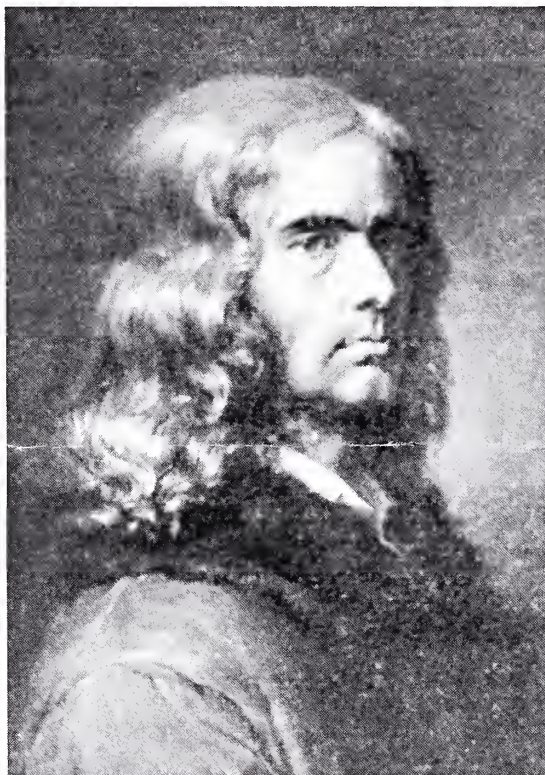
by Kenton L. Chambers

The term *orthography*, as used in botanical nomenclature, refers to the spelling and grammatical form of the Latin scientific names of plants. In keeping with the principle that each taxonomically defined group (a family, genus, species, etc.) ought to have only one “correct” Latin name, it is logical that each name ought to have only one “correct” spelling. In fact, however, the botanical literature contains a multiplicity of variant or alternative spellings, even for some of our most common plants. Examples are the genus of California poppy, spelled *Eschscholtzia* or *Eschscholzia*; skunk-cabbage, spelled *Lysichitum* or *Lysichiton*; false-dandelion, spelled *Hypochoeris* or *Hypochaeris*; death camas, spelled *Zygadenus* or *Zigadenus*, and wild-hollyhock, spelled *Sidalcea malvaeflora* or *malviflora*. In all these cases, the latter spelling is correct, according to the 2000 edition of the *International Code of Botanical Nomenclature (ICBN)*, which devotes fully nine pages to its rules and recommendations dealing with orthography.

The nomenclatural rules given by *ICBN* are retroactive to 1753 (the date of Linnaeus’ *Species Plantarum*) and provide that “(t)he original spelling of a name or epithet is to be retained, except for the correction of typographical or orthographical errors...” (emphasis added). This apparently straightforward rule (to retain the spelling used by the original publishing author) is unfortunately open to disagreement on what constitutes a “typographical or orthographical error.” I will illustrate this problem with an example from the genus *Montia* (Portulacaceae), involving an important but seldom mentioned historical figure in northwest American botanical exploration.

Adelbert von Chamisso (1781-1838) was the naturalist aboard the Russian exploring ship “Rurick,” which visited Alaska and California in 1816 under the command of Lieut. Otto von Kotzebue. Chamisso is best known for his discovery of the California poppy, *Eschscholzia californica*, which he named in honor of J. F. Eschscholtz, the ship’s surgeon and entomologist. In publishing this genus, Chamisso omitted the “t” from Eschscholtz’s name, but as there is no evidence this was a “typographical error” (he used the same spelling in later publications), we must retain his original name *Eschscholzia*! This illustrates the minute details and ambiguities of orthography, which can be highly annoying to

taxonomists who try to follow the rules and stabilize the Latin names of plants. Another spelling oddity involving Chamisso is the name *Camissonia*, a large genus of western North American Onagraceae. It was published in his honor by J. H. F. Link in 1818, but spelled without an “h” (perhaps to preserve the soft Italianate pronunciation of “C” rather than the hard K-sound of the Latin “Ch”). Chamisso also named several other western American genera to commemorate his botanical contemporaries, including *Lessingia* (Asteraceae), *Horkelia* (Rosaceae), and *Romanzoffia* (Hydrophyllaceae)—although the latter name honors Count Nikolai Romanzoff, the wealthy Russian sponsor of the “Rurick” expedition, rather than a botanist.



Portrait of Adelbert von Chamisso (from *Flora Malesiana*, Ser. 1, Vol. 1, 1950)

The problem of orthography in *Montia* that caught my attention involves the species *M. chamissoi* (Ledeb. ex Spreng.) Greene (familiarily known as toad-lily), which was first published in 1825 as *Claytonia chamissoi* by Sprengel. In 1831, Chamisso himself (who had collected the plant at Unalaska in 1816) ignored “*chamissoi*” and published the spelling as *Claytonia chamissonis*. This latter species epithet is almost always used in plant names honoring Chamisso; examples include *Stachys chamissonis* (hedge-nettle) of coastal California, *Ambrosia chamissonis* (silver burweed) of West Coast beaches, and *Arnica chamissonis* (leafy arnica), widespread in western North America. My reaction was: “If Chamisso himself disapproved of the spelling *chamissoi*, there must be something wrong with it.” I wondered whether

chamissoi might be an orthographic error based on an incorrect latinization of Chamisso’s name. If so, it would be permissible to correct the spelling to *chamissonis*, as Chamisso and other 19th century authors (including John Torrey, Asa Gray, Sereno Watson, and Edward Lee Greene) had done.

How personal names can be latinized into scientific names is explained in an excellent article by Dan H. Nicolson (*Taxon* 23:549-561, 1974). Names ending in the letter -o have been treated in several different ways by past botanical authors. According to *ICBN*, it is correct to form the possessive case simply by adding the letter -i after the terminal -o as Sprengel had done (“*chamissoi*”). However, it was common in the early days of taxonomy to treat personal names ending in -o as being Latin nouns in the Third Declension, taking the

See Chamisso, page 6

Meadow Knapweed (*Centaurea xpratensis* Thuill.)

by Cindy Roché

Ten years ago, if you mentioned "Hood River" to me, I answered, "meadow knapweed." Since then I moved from the mid-Columbia region to southwestern Oregon and learned that Hood River is not the meadow knapweed capital after all.

In his classic work on the distribution of weedy thistles, J.T. Howell (*Leaflet. West. Bot.* 9:17-32) reported in 1959 that meadow knapweed was cultivated for winter forage near Roseburg, where it remains abundant today. It is leafier and more palatable to livestock than other knapweeds, but as plants mature, both palatability and nutritional value decline. Even though defoliated plants regrow and produce seeds, it does not tolerate continuous, excessive grazing. As with other knapweeds, it is undesirable because of its low palatability to grazing animals and its invasion and persistence in native plant communities.

Meadow knapweed (*Centaurea xpratensis*) is a fully fertile hybrid between black knapweed (*Centaurea nigra* L.) and brown knapweed (*C. jacea* L.). Hybrids can be produced easily with either species as the female parent since both parents and the hybrid offspring are tetraploid, $2n=44$. For the same reason, the hybrids backcross with either parent and form populations whose phyllaries range from brown knapweed's papery bracts to black knapweed's comb-like fringe (see illustration).

Brown and black knapweed are native to Europe, where hybrids also occur. Both have been grown as ornamental garden plants and introduced in ballast at seaports. Brown knapweed was grown as a hay/forage crop (known in Quebec in the 1850s as "bull clover") and also as a pollen source for honeybees. Black knapweed was collected in Pullman, Washington, in 1895, and on ballast ground near Portland from 1902 to 1916. By the second half of the 19th Century, black knapweed was showing its true colors in eastern Canada: "...by perennial root spread it becomes a most tenacious weed, and is spread rapidly by seed. From the original location it is now traceable for a mile or more." Oregon boasts the earliest Pacific Northwest record of meadow knapweed, from Bridal Veil, Multnomah County, in 1911. Subsequent collections by R.V. Bradshaw in 1918 were from Eugene. (Prior to the Oregon Flora Project, a quick reference to *Centaurea* herbarium records was Roché and Talbott 1986, "The collection history of *Centaureas* found in Washington State," WSU Res. Bull. XB0978).

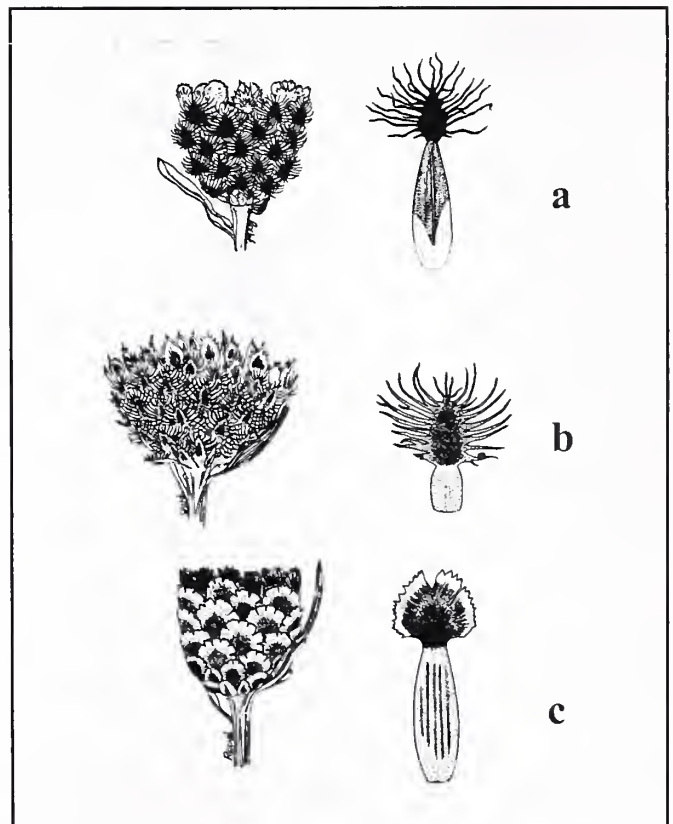
Meadow knapweed is perennial from a woody crown. Straplike leaves have entire, lobed or toothed margins. The rose-purple flowers (occasionally white, from the brown knapweed parent) are borne in heads about the size of a marble, spherical rather than the urn shape common for *Centaurea*. Flowering peaks in July and August, but occasional flowers can be found west of the Cascade Mountains into November and December, particularly on damaged plants. Phyllary bracts are light to dark brown, with a papery fringed margin. At the time of flowering, the bracts reflect a metallic golden sheen. Achenes are about 1/8-inch

long, ivory-white to light brown, sometimes bearing a row of short hairs (pappus) opposite the point of attachment. Seedlings are tap-rooted; mature plants develop a cluster of somewhat fleshy roots below the woody crown.

Meadow knapweed prefers moist sites, including pastures and meadows along rivers, streams, and irrigation ditches, and in openings in forested areas — sites suitable for oxeye daisy. It primarily reproduces by seed, but root and crown fragments resprout when disturbed by heavy equipment or cultivation. Seeds are carried in rivers, streams or irrigation water, in hay or by vehicles along roadsides. Meadow knapweed is expanding in western Oregon and more sites are appearing in eastern Oregon. The Oregon Flora Project is mapping its distribution and tracking its expansion.

Two additional references that may interest readers are Roché and Roché 1991, "Meadow knapweed invasion in the Pacific Northwest USA and British Columbia, Canada", *Northw. Sci.* 65:53-61; and PNW Extension Bulletin 432, *Identification of Knapweeds and Starthistles in the Pacific Northwest*, available at OSU.

Cindy Roché of Medford is an expert on knapweeds. She wrote Masters and PhD theses on the genera *Centaurea* and *Crupina* and edited the Knapweed Newsletter. NPSO members know her as co-editor of their journal, *Kalmiopsis*. 🐝

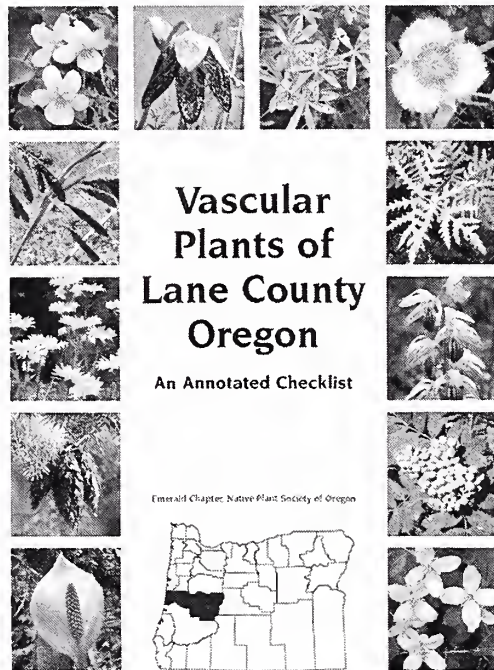


Involucre and detail of middle phyllary bract of a) black, b) meadow, and c) brown knapweed. Drawing by Cindy Roché.

Lane County Checklist to appear this spring

by Charlene Simpson

Vascular Plants of Lane County, Oregon: An Annotated Checklist. By C. Simpson, J. Koenig, J. Lippert, R. Love, B. Newhouse, N. Otting, S. Sundberg, D. Wagner, and P. Warner. Emerald Chapter, Native Plant Society of Oregon. Eugene, Oregon. 2002. Approximately 90 pages. Paper, spiral binding. \$15.



The long-awaited Checklist of Lane County's native and naturalized vascular plants will be available this spring. It is authored by Emerald Chapter NPSO members and encompasses over 1,740 plant taxa which represent approximately 39 percent of the 4,460 plants currently recognized by the Oregon Vascular Plant Checklist Project. Species are listed alphabetically by family and genus within four major groups: Pteridophytes, Gymnosperms, Dicots and Monocots. Data have been derived from herbarium labels, regional floras, published articles, academic theses, surveys, field trip lists, and credible observations.

The publication represents a cooperative effort between the Oregon Flora Project and Emerald Chapter, NPSO. The Flora project provided information on accepted names, synonyms, and plant origin (native vs. non-native) from the draft *Oregon Vascular Plant Checklist*, along with over 30,000 Lane County records from Oregon Plant Atlas Project databases. The OSU Herbarium provided access to the facility and data from plant specimen labels. Says Scott Sundberg, "Efforts of the Lane County Checklist group, along with similar projects in other counties, contribute enormously to characterizing our state's rich botanical diversity. The Lane County group has been especially helpful by providing valuable feedback on drafts of the Oregon Checklist."

The Lane Checklist is far more than simply a list of species, as it also contains a wealth of annotated information. Each taxon has been scored for expected Lane County habitat, ecoregion, and frequency of occurrence. A full color map of Lane County's five major ecoregions is also included. A notes field contains miscellaneous information; comments here might note rarity or perceived threat, noxious weed designation, invasive habit, historical occurrence, or other interesting information to stimulate interest. Rare and endangered species, as well as Oregon Department of Agriculture listed noxious weeds and Emerald Chapter's designated invasive ornamentals, are flagged. Native or non-native origin is indicated by typeface.

The Checklist is written for a wide variety of users: professional and amateur botanists, landscapers, students, land managers and others interested in Oregon's vegetation. Some background knowledge of botanical nomenclature will be useful, but it is assumed that readers will have no trouble locating scientific and/or common plant names in the comprehensive index. Also included is helpful introductory material as well as an extensive bibliography. Lane County artist and Native Plant Society *Bulletin* editor, Tanya Harvey, provided a cover design composed of her beautiful digital images depicting the diversity of Lane County's native flora.

A goal of the authors has been to keep the publication affordable. Loans from Emerald Chapter, NPSO, and the Eugene Natural History Society helped defray publication expenses. All proceeds after expenses will be donated to the Oregon Flora Project.

Advance orders will be accepted beginning April 1, 2002. To receive one or more copies of the new Checklist, please send your check for \$15 (made payable to Emerald Chapter NPSO) for each copy to: Lane Checklist, Emerald Chapter, Native Plant Society of Oregon, PO Box 902, Eugene, Oregon 97440-0902. ❀

Ann and Thea, continued from page two

patchwork of floras and plant guides necessary to identify plants in this part of the state, she began to appreciate the critical need for a new Flora for Oregon.

Ann commented recently that she looks forward to working with the dynamic team of Oregon Flora Project contributors, and is especially excited about helping develop the morphological database in support of a multiple-entry key. Thea recently told OFN that she is very excited to participate in the creation of a new flora and to assist in the development of the electronic tools that will catalyze interest in and availability of this invaluable information source to all nature enthusiasts.

The Flora Project enthusiastically welcomes two talented women to OSU, convinced that this particular meeting of east and west will benefit all involved. ❀

possessive ending *-nis* (hence "*chamissonis*"). A third form of Latinization also was used, which involved combining the Third Declension stem, ending in *-n—*, with regular Second Declension endings such as *-ii* and *-ia*. This seems to be how the generic name *Camissonia* was derived. I wrote to Dr. Nicolson and asked him whether the modern *ICBN* rules dictate that any name containing the epithet *chamissonis* is an "orthographic error," which must be corrected to *chamissoi*. He replied that, luckily, the stem-augmenting letter *-n—* represents an "intentional latinization," producing the exceptional but permissible genitive form *chamissonis*. Given the intricate legalisms of *ICBN*, it is fortunate that its rules do allow us to use these three alternative latinizations of Chamisso's name.

In a later article I will discuss further the scientific contributions of Adelbert von Chamisso, hoping to give a glimpse, as well, into the personality of this energetic and talented botanist. 🌿

Flora project volunteers welcome every Tuesday!

We need **YOU!** This is your opportunity to actively participate in and to learn about the Oregon Flora Project. Each Tuesday, starting April 9, you are welcome to help with projects at the OSU Herbarium in Corvallis.

Sample activities: Pasting barcode labels on specimens; proofreading databases; preparing mailings; researching species locations in the literature; entering data; researching literature; sorting specimens prior to filing.

When: between 9am and 4 pm on Tuesdays, beginning April 9.

Where: OSU Herbarium on the Oregon State University campus in Corvallis, Cordley Hall room 1046. Parking is available with a free campus day pass.

Bring: Bag lunch (or plan to eat out; many local restaurants are just a few blocks away).

Please contact Thea Cook in advance, at (541) 737-2445, cookthe@bcc.orst.edu, so we can plan for your visit.

In Memoriam: Bonnie C. Templeton

We were saddened to learn of the death on January 29, 2002 of Dr. Bonnie C. Templeton. Dr. Bonnie, as she was affectionately known, who died in Los Angeles of complications of a heart attack, was one of the OSU Botany Department's major benefactors. Her very kind and generous gift provided funds for the construction and furnishing of the Bonnie C. Templeton Conference Room and Preparation Room in Cordley Hall across from the Herbarium. The rooms, which were dedicated in 1999, are much used and appreciated by Oregon Flora Project and Herbarium staff.

Botanical illustration workshop May 3-5 to benefit the Oregon Flora Project

by Linda Hardison

The Friends of the Oregon Flora Project presents an exceptional opportunity to appreciate the intricacies some of our state's most beautiful wildflowers. An introductory botanical illustration workshop by New York artist Anne Jaster will be held May 3-5 at Lane Community College in Eugene. The weekend will begin with a Friday evening reception and presentation on the history of botanical illustration; Saturday and Sunday will follow a format of morning classroom instruction with afternoons of field drawing.

Anne Jaster is a botanical artist and teacher whose classes are offered by the Landis Arboretum in Esperance, NY; her paintings of Chilean plants have been exhibited at the New York State Museum. At our workshop, she will share her skills in pencil and colored pencil illustration of plants. Her philosophy is reflected in the writings of Martha Cain, which emphasize "close observation of nature ...singling out common and not so common objects and presenting them in a formal way, thus giving viewers a heightened awareness...and stimulating them to observe the richness in their own surroundings." The workshop will be tailored for amateurs, artists, scientists, and nature enthusiasts of all skill levels.

Registration information. Cost: \$90 for members of Friends of the Oregon Flora Project; \$100 for non-members. Friday evening only: \$8/\$10. Class size: 15 participants. Preregistration and pre-payment required; deadline April 12. To register or for more information contact Thea Cook at cookthe@bcc.orst.edu or (541) 737-2445. For additional information, see www.oregonflora.org.



Pencil drawing of *Pinus jeffreyi* cone by Anne Jaster

New Records for Oregon

by Scott Sundberg

A primary goal of the Oregon Flora Project is to document the presence of plant species, subspecies and varieties (taxa) growing outside of cultivation in Oregon. The results of this effort will be summarized in the Oregon Vascular Plant Checklist. For the past seven years we have been seeking documentation on Oregon taxa that have not previously been reported for the state in our major floras, and we have found many! Beginning with this issue, we will periodically report on plants that are "new" to the state. The names will be listed as they appear in the current draft of the Oregon checklist. The final draft of the checklist may differ.

Vicia lutea L.

yellow vetch (exotic)

General distribution: Native to the Mediterranean region; sporadically occurring in the US, reported from Oregon, Alabama, Texas, Louisiana, and North Carolina (Neill, A.K. 1999 *Sida* 18:1265-1266; <http://plants.usda.gov>).

Oregon localities: central Lane Co. in and west of Eugene; weed in disturbed areas in a city park and along roadsides.

Comments: Yellow vetch is a sprawling annual herb with yellow flowers. It was discovered by John Koenig in 1998 and later found several miles away by him and Charlene Simpson. Since disturbed habitats are abundant, it is probably established in other areas of Oregon.

Scirpus californicus (C.A. Mey.) Steud.

Schoenoplectus californicus (C.A. Mey.) Palla

California bulrush (native)

General distribution: Oregon to California, southern U.S., South America, and oceanic islands.

Oregon locality: Douglas Co., north of Reedsport along Highway 101, elev. 100 feet; emergent wetland at edge of pond.

Comments: California bulrush is a tall perennial herb that looks similar to tule (or hardstem bulrush, *Scirpus acutus*) except that California bulrush has stems that are triangular in cross section. It was discovered by Alex Atkins in 2000 and identified by Scott Sundberg. Sundberg and Linda Hardison later visited the site and found a healthy population there, but did not find it at several other ponds and lakes in the vicinity. Although it is probably native, it is possible that it was unintentionally introduced by people using the pond and may be exotic.

Thanks

The following donors have recently contributed via the OSU foundation, Friends of the Flora, and NPSO membership pledges: Anonymous (2), NPSO Corvallis Chapter, NPSO Willamette Valley Chapter, Sue Allen, John Annear, Betty E. Bahn, Connie & Julian Battaile, Wilbur L. Bluhm, Bert Brehm, Ken & Henny Chambers, Glen Cole, James Conklin & Joyce Sanders, Barbara Cowan, Phacelia Cramer, Caitlin Cray, Lynn Crowell, Ellen A. Crumb, Jan & Dave Dobak, Nona Donahue, Denis Dooley, Jim Duncan & Elaine Plaisance, Mike & Nancy Fahey, Jean Findley, Tom Galli, Valerie Geertson, James & Janice Gerdemann, Edwin Gerow, Marvel Gillespie, Barbara & Glenn Halliday, Michael Hartman, Tanya Harvey, Marilynn Karbonski, Lyla Lampson, Shane Latimer, Aaron & Sara Liston, Kenneth & Robin Lodewick, Rhoda & Glen Love, Jay & Ann Lunn, Dan Luoma, Vern & Madeline Martalla, Dorothy J. Matthews, Cheshire Mayrsohn, Fern McArthur, Barbro McCree, Bruce McCune & Pat Muir, Esther & Peter McEvoy, Michael McKeag, Tom Meehan, Margaret Meierhenry, Mary J. Moffat, Rick Momsen, Susan Morr., Katherine Morton, Barbara Mumblo, Bruce Newhouse, Naoma Neyerlin, Dennis Odion, Bonnie Brunkow Olson, Nick Otting & Danna Lytjen, Theodore & Laramie Palmer, Sandy Poinsett, Marna and Robert Porath, Margaret Powers, Richard Prusz, Carol & Kurt Putnam, John & Phyllis Reynolds, Douglas and Arlene Ripley, Don Roberts, Mary Ann Roberts, Freeman Rowe, Bitty Roy, Jane Sansregret, Thomas Seddon, Charlene Simpson, Katherine Skirvin, Paul Slichter, Alice Smith, James P. Smith, Kareen Sturgeon, Molly Sullivan, Emily Swan, Keith Swenson, Mildred Thiele, Charles Trainer, Sarah Uebel, Elaine Urban, Sarah Walker, Nancy Weber, Faith Wilkins, Jean Wood, Carolyn Wright, Jo Ann Yeager, Walt Yungen.

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Mail to:

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☐

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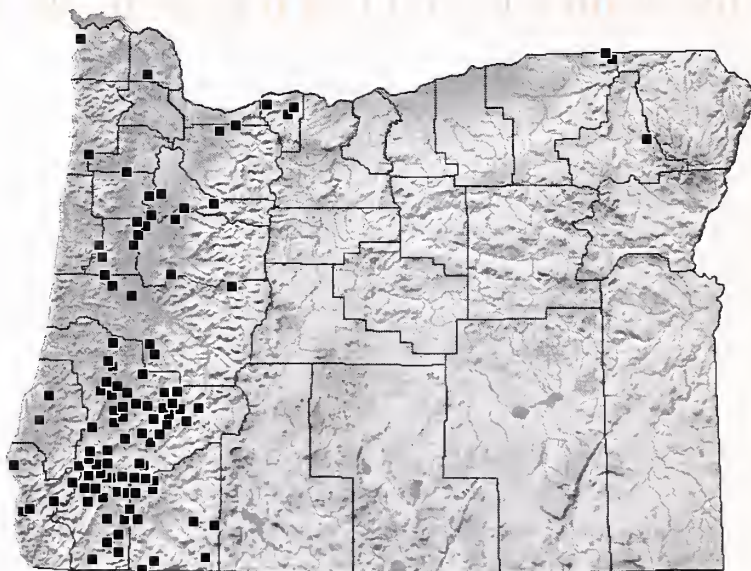
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Did you know?

- James Carlton Nelson, a Salem high school principal and botanist, published an article in the journal *Torrey* in 1917 on the introduction of foreign weeds as ballast plants at Linnton, Oregon on the Columbia River. Meadow knapweed was one of the species listed in this paper.
- Biological control agents have thus far not been successful in controlling meadow knapweed. The Oregon Department of Agriculture has managed to establish three seed-feeding insects on the weed — a moth, a fly, and a weevil. The weevil, *Larinus minutus*, shows possible promise if its numbers increase as they do on spotted and diffuse knapweed. No root feeders have yet been established on meadow knapweed.



Oregon distribution of meadow knapweed (*Centaurea xpratensis*).

Current and historical localities of meadow knapweed in Oregon. Data from federal and state agencies, the Oregon Flora Project, and Cindy Roché.



OREGON FLORA NEWSLETTER

Volume 8 Number 2 • Oregon State University • June 2002

Lincoln Constance (1909-2001): the Oregon years

by Rhoda Love

In last September's *Jepson Globe*, Berkeley botanist Bruce Baldwin wrote, "June brought the end to an era at the Jepson Herbarium and U. C. Berkeley, with the loss of our dear friend and invaluable colleague professor Lincoln Constance, at 92." An earlier announcement of Dr. Constance's death stated, "Lincoln was the patriarch of Botany at Berkeley and foremost expert on Umbelliferae/Apiaceae systematics. He was immensely influential in shaping the modern history of the University of California and of systematic botany on a world level. ... He was Curator of Seed Plants in the University Herbarium beginning in the 40s, Chair of the Department of Botany in the early 50s, Dean of the college of Letters and Science from the mid-50s to early 60s, Vice Chancellor of Academic Affairs from the early to mid 60s, Director of the University Herbarium from the early 60s to mid-70s."

Indeed Lincoln Constance had a long and illustrious career in California, but I wonder how many *Newsletter* readers realize that the great man's interest in botany began here in Oregon? A delightful reminiscence by Constance makes it clear that the seeds of his lifelong love affair with botany were planted and nurtured here in our own state. In his 1988 article "Plant Taxonomy in My Time" (*Aliso* 12:1-5),

See Constance, page 10



Lincoln Constance age 17, High School graduation photo, Eugenean, 1926. Courtesy Lane County Historical Museum.

Portulacaceae—reconciling DNA with taxonomy, or vice versa

by Kenton L. Chambers

Members of Portulacaceae are succulent annual or perennial herbs, taking their family name from the weedy potherb *Portulaca* (purslane) and represented in Oregon's flora by several small or medium sized genera such as *Lewisia*, *Montia*, *Claytonia*, *Calandrinia*, and *Calyptidium*. *Lewisia*, in particular, is of considerable interest to rock garden enthusiasts, who have developed numerous interspecific hybrids from crosses among its 19 species (see *Lewisias*, by B. LeRoy Davidson, Timber Press, Portland OR, 2000). The family and its closest relatives form the core of the order Caryophyllales (called the "Centrospermae" in older taxonomy textbooks). This core group includes such common families as Caryophyllaceae (pink family), Chenopodiaceae (goosefoot family), Amaranthaceae (pigweed family), Nyctaginaceae (four-o'clock family), Aizoaceae (iceplant family), and—surprisingly—Cactaceae (cactus family). In addition to the succulent leaves and stems of many genera of Caryophyllales, there are similarities in the biochemistry (frequent absence of anthocyanin pigments, presence of CAM and C4 photosynthesis), the morphology of embryos, seeds, and pollen grains, the cellular ultrastructure of phloem tissue, and the placentation of the ovary, which make this one of the most "natural" orders of angiosperms.

Beginning in 1984, taxonomists have used modern, computer-assisted cladistic methods to solve the question of phylogenetic relationships within order Caryophyllales. Although the earliest of these phylogenetic studies, based only on morphology and biochemistry, was inconclusive, later work using DNA data has given us many new and surprising insights for the group. Several genes have been "sequenced" from the chloroplasts and nuclei of a wide selection of species. From the gene mutations that are shared among related taxa, computer programs can produce "cladograms," which are tree-like charts showing the most probable hypotheses of evolutionary relationships. These DNA phylogenies are independent of the morphological traits traditionally used in plant taxonomy, and when properly interpreted, they can untangle the evolutionary parallelism and convergence that so often occur in morphological features.

Some of the conclusions that have come from the DNA studies are the following:

1. The largest core families of Caryophyllales are those listed

See Portulacaceae, page 11

Dr. Constance recalls his boyhood days in Eugene, the influence of his parents, and his meeting with University of Oregon botanists, Albert Sweetser, Ethel Sanborn, and especially Louis F. Henderson, and the role they played in his eventual choice of career.

Lincoln was born in the Willamette Valley February 16, 1909. He later told David Wagner of the University of Oregon that every year he and his family would search the woods for the first blooming spring beauty (then *Dentaria tenella*, now *Cardamine nuttallii*) on the anniversary of his birth. He writes that his parents encouraged an interest in natural history and that he experimented with taxidermy and butterfly collecting before his meeting with Henderson. In the *Aliso* article he writes, "The first scientific name I learned was *Osmaronia cerasiformis*, which unfortunately has had to give away to *Oemleria*, a word that evokes no nostalgia whatever." He goes on, "Reportedly, odor is the most potent stimulus of memory. For me, the red-flowered *Ribes* yield the true smell of spring."

See Constance page 13

Illustrations of *Erythronium oregonum* on the front and back covers by Linda Ann Vorobik.

The Oregon Flora Newsletter is published three times a year by the Oregon Flora Project and the Oregon State University Herbarium. The Editor is Rhoda Love and the Production Assistant is A. Paige Kruger.

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Dwarf rue-anemone: right in our own backyard

by Charlene Simpson

Emerald Chapter, NPSO, has recently published the long-awaited *Vascular Plants of Lane County, Oregon: An Annotated Checklist* (OFN, Feb. 2002). As we neared the final stages of our project we thought we had recorded every native and naturalized vascular plant species known in Lane County. However, there was a late surprise right in our own backyard.

This spring Dave Predeek, Emerald Chapter member, avid naturalist, and enthusiastic volunteer, led us to *Enemion stipitatum* (A. Gray) J.R. Drumm. & Hutch. (= *Isopyrum stipitatum* A. Gray), a tiny anemone-like perennial herb in the Ranunculaceae. A year earlier he had discovered the early blooming dwarf rue-anemone while doing volunteer work for a restoration project at Howard Buford Recreation Area, east of Eugene. Dave reported his "find" to Emerald Chapter members and to Ed Alverson, Willamette Valley Stewardship Ecologist for the Nature Conservancy. Emerald Chapter members John Koenig and Rhoda Love verified Dave's ID this year. We estimated 1,500-2,000 individual plants at the site.

The plants are growing in the alluvial floodplain of the Coast Fork of the Willamette River under an open canopy of bigleaf maple. The area has a long history of disturbance, particularly cattle grazing when the site was in private ownership. The understory had been dominated by Himalaya blackberry, but as part of the restoration regimen much of the blackberry cover was removed during the summer of 2001. The *Enemion* plants appear to have benefited from the resulting reduction in competition.

Enemion stipitatum rises on a 3-12 cm stem from tuberous roots. Diminutive white flowers of 3-5 tepals (usually with 10 stamens) are borne on peduncles that do not exceed the leaves. The solitary flowers open in late winter or early spring. Previous workers (Hitchcock, et. al., 1964; Calder and Taylor, 1963) placed this and the related *Enemion hallii* in the genus *Isopyrum*. However, the Oregon Vascular Plant Checklist follows the nomenclatural treatment used in the *Flora of North America* (1997) and places it in the genus *Enemion*.

The species is on the Oregon Natural Heritage Program's List 2 (taxa that are threatened with extirpation in Oregon). It was also one of the species identified as a Lane County

See *Enemion* page 12



Dave Predeek examining *Enemion stipitatum* east of Eugene. Photo: Ed Alverson. Insert: *Enemion stipitatum*. Photo: Charlene Simpson.

in my first paragraph, plus the Phytolaccaceae (pokeweed family) and Molluginaceae (carpetweed family), which are minor elements in Oregon's flora.

2. Related families that are outside this "core" group but connected to Caryophyllales include the knotweeds (Polygonaceae), plumbagos (Plumbaginaceae), goatnut (Simmondsiaceae), tamarisk (Tamaricaceae), and sundews (Droseraceae)—families that, in previous angiosperm classifications, were thought to be remote and unrelated.

3. Amaranthaceae and Chenopodiaceae are very closely related and could well be merged into a single family. However, the genus *Sarcobatus* (greasewood) is unrelated to other Chenopodiaceae and should form its own family, close to Nyctaginaceae.

4. The large and distinctive family Cactaceae, which previously was placed in its own order Cactales, is phylogenetically connected directly to the Portulacaceae, having *Portulaca* (purslane) as one of its closest relatives.

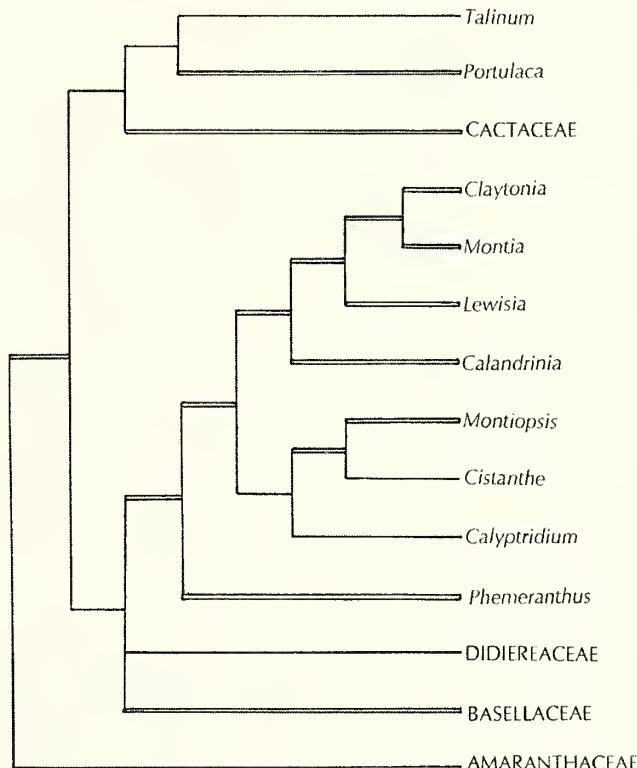
5. Various western North American genera of Portulacaceae, such as *Lewisia*, *Claytonia*, *Montia*, *Calyptidium*, and the single Oregon species traditionally referred to *Talinum*, are phylogenetically separate from *Portulaca*, *Talinum*, and the Cactaceae. As a group, their closest relatives are in far off regions like South America, South Africa, Madagascar, and Australia—a most unusual geographical pattern.

The accompanying chart is a simplified version of DNA cladograms by Hershkovitz & Zimmer (2000) and Applequist & Wallace (2001), showing relationships among members of the so-called "portulacaceous cohort" of genera. Arising within this cohort are the families Cactaceae, Didiereaceae (in Madagascar), and Basellaceae (pantropical). *Lewisia*, *Claytonia*, *Montia*, *Calyptidium*, and *Phemeranthus* are mainly North American; *Calandrinia*, *Cistanthe*, and *Montiopsis* are principally South American; and *Talinum* is in tropical America and Africa.

Several taxonomic changes have been proposed for western American genera, based partly on these new studies. *Calyptidium* must be expanded to include the genus *Spraguea*, and the former *Spraguea umbellata* should be divided into two species, *Calyptidium umbellatum* (Torr.) Greene and *C. monospermum* Greene (as was done in *The Jepson Manual*, 1993). Two species of *Calandrinia* in California should be moved to *Cistanthe* (*C. ambigua* and *C. maritima*). *Phemeranthus* is recognized as a genus separate from *Talinum*, to include 16 species in North

America; in Oregon we have *P. spinescens* (Torr.) Hershkovitz, formerly called *Talinum spinescens* Torr. The Washington species known as *Talinum okanoganense* in *Flora of the Pacific Northwest* is renamed *Phemeranthus sediformis* (Poelln.) R. W. Kiger. Several species of *Montia* have been transferred to *Claytonia* (see *The Jepson Manual*).

A problem for the future is what to do with the family name Portulacaceae, since the name-bringing genus *Portulaca*, along with *Talinum* and family Cactaceae, is on a separate evolutionary branch from the branch with *Lewisia*/*Claytonia*/*Cistanthe*/*Phemeranthus*, etc., plus families Basellaceae and Didiereaceae. If this latter group is recognized as a separate family, its name would have to be the earliest one that is



Simplified cladogram of the "portulacaceous cohort" derived from analyses of nucleotide sequences of the chloroplast *ndhF* gene and nuclear ribosomal RNA (rDNA) gene. Amaranthaceae is the outgroup taxon. Family names are capitalized; genera of Portulacaceae are italicized. Double lines lead to presumed monophyletic groupings that were consistent in 90 percent or more of the phylogenetic analyses. Groups with less than 90 percent support are indicated by single horizontal lines.

based on one of the included genera. When I find out what this name is, I'll let you know.

References

- Applequist, W. L. & R. S. Wallace. 2001. Phylogeny of the portulacaceous cohort based on *ndhF* sequence data. *Syst. Bot.* 26: 406-419.
- Hershkovitz, M. A. & E. A. Zimmer. 2000. Ribosomal DNA evidence and disjunctions of Western American Portulacaceae. *Molec. Phylogen. Evol.* 15: 419-439.

Note: CAM = crassulacean-acid metabolism; C4 photosynthesis involves carbon dioxide being fixed first as a 4-carbon, rather than 6-carbon, compound.

leapfrogger (OFN, June 2000). These are species known from sites both to the north and south of Lane County but not known from our area.

Ed Alverson (1989. *Madroño* 36:217) reports only three other occurrences in the Willamette Valley: Yamhill County, along Willamina Creek, north of Willamina; Polk County, along Mill Creek in Buell County Park; Benton County, Marys River, south of Corvallis (this population has not been relocated and is believed to be extirpated).

There are also collections from Douglas County and south from the Siskiyou region of Oregon and California. Although located thus far in only four counties in the Willamette Valley, *E. stipitatum* should be sought in other Willamette Valley counties as well. In the Willamette Valley it is found only in moist deciduous woods, on rich alluvial soils.

We have questions. Why is *Enemion* so infrequently encountered in the Willamette Valley? Does loss of suitable habitat explain dwarf rue-anemone's rarity here? We also wonder why the Buford Park population was not discovered earlier. The Yamhill and Polk County sites were identified in the late 1950s and the Benton County site in 1980. Twenty-two years later we add Lane County. (For full references, see the Oregon Flora website.) 🌱

Illustration workshop a great success

by Linda Hardison

In early May, fifteen people from throughout the Willamette Valley enjoyed a weekend of botanical illustration taught by Anne Jaster. The workshop was held in Eugene, and began with a reception and impressive slide presentation on the history of botanical illustration. Participants then enjoyed two days of drawing, both in the classroom and at the wildflower-filled Mt. Pisgah Arboretum. Comments from the class were glowing: "I learned all I had hoped to and more," wrote one participant. "This is a great way to get native plant enthusiasts together!" said another. "Anne...was wonderful. I know I want more of this!" commented a third.

The class, offered by the Friends, brought in \$1,350 to the Oregon Flora Project. We extend our thanks to Anne Jaster, Lane Community College, and the Mt. Pisgah Arboretum for their generosity in this very successful fund-raising endeavor for the Flora Project!



Photo: Rhoda Love

Participants in the Illustration Workshop smile for the camera. Instructor Anne Jaster is on the far right.

New records for Oregon by Scott Sundberg

Here we continue to report on plants "new" to Oregon.

Fauria crista-galli (Menzies ex Hook.) Makino (Menyanthaceae)

= *Nephrophyllidium crista-galli* (Menzies ex Hook.) Gilg.

deer cabbage (native)

General distribution: Oregon and Washington (Olympic Mountains and North Cascades) to Alaska, British Columbia, eastern Asia.

Oregon locality: Linn Co., north of Snow Peak, 3,600 feet; wet meadow.

Comments: Deer cabbage is a perennial herb in the Menyanthaceae, with white flowers and reniform, somewhat fleshy leaves up to 12 cm. broad. It was discovered by Rachel Schwindt during vegetation surveys she conducted in 1999, and identified by Scott Sundberg. Wilbur Bluhm, along with Claire Hibler and other BLM botanists later visited the site and found large populations of the plant.

Elaeagnus umbellata Thunb. (Elaeagnaceae)

autumn olive (exotic)

General distribution: Native to China, Taiwan and Japan, escaping cultivation in many areas.

Oregon localities: Clatsop Co., Columbia River, Fitzpatrick Island, sandy dredge spoils; Lane Co., west of Eugene, along a fencerow.

Comments: Autumn olive is considered an invasive plant in many areas. In the *Manual of the Flowering Plants of Hawai'i* (Wagner and Sohmer 1999) it is described as "growing rapidly into an impenetrable, thorny thicket, usurping space from more valuable species. The shrub can dominate almost any landscape type, from fencerows to meadows to open woods, even sand dunes and mine spoils." The species was found naturalized in two places in Oregon, but it is uncertain whether or not it can become as invasive here as it can be in the much milder climate of Hawaii.

Autumn olive is a deciduous and often spiny shrub to 12 feet tall with elliptic leaves to three inches long. It was first collected outside of cultivation in Clatsop Co. by Cathy Maxwell in 1992. Dick Brainerd found it near Eugene in 1998. Both specimens were identified by Scott Sundberg while preparing the Elaeagnaceae treatment for the Oregon Checklist. 🌱

Project news by Scott Sundberg

From time to time I sit back and rummage through the many databases that the Oregon Flora Project maintains. Today I got into the "Students" database, where we record the names of students who have worked for us over the years, and found that there have been an astonishing 62! Volunteers go into another database. This summer I am fortunate to have help from Thea Cook and Ann Willyard, who are doing almost all student and volunteer supervision. Their challenge is to keep track of 18 students with different tasks and work schedules. On top of this, the students are usually scattered among four rooms on two floors of Cordley Hall. This task is somewhat easier on hot days, as only one of the rooms has air conditioning!

As you might guess, the project is moving along at a rapid clip. Students are entering label data from 1,800 specimens per week. These data will be used by the Flora project in many ways, and are valuable records for the online Atlas. We have begun work on a morphology database (yes! work on the Flora itself). Ken Chambers recently turned in checklists for 25 grass genera. Henny Chambers and others have been working steadily through a number of other groups. We're also busy with the rare plant guide prototype, the photo gallery, and on and on and on... it's an exciting time for the project! 🌱

Continuing to recall his youth Constance goes on, "While still in high school, I discovered the University of Oregon's Botany Department and became acquainted with its staff: Albert Sweetser, ... Ethel Sanborn, the sister of my high school biology teacher, and Lois F. Henderson, botanist turned orchardist and back to botanist, who became my mentor and role model." Elsewhere, Constance has written that the elderly Henderson looked "remarkably like Santa Claus, white beard, rosy cheeks." He recalls that Henderson "was the recipient of all plants sent in for identification, and I was indulgently allowed to participate in this activity... Thus, I was already a part of the botanical establishment."

Because of this early experience, "It was preordained that when I entered [the University of Oregon] I should declare a Botany major..." In 1928, Henderson sent the 19-year-old Constance, to botanize in rugged Klamath and Lake Counties. Of the experience he wrote, "Despite the heat, the voracious mosquitoes, and the ominous rattlesnakes, it was distinctly a 'learning experience.'" When Henderson later published a new species of *Silene*, adding the words: "Collected by L. Constance, a student at the University of Oregon," Constance admits that he was, in his words, "irretrievably hooked."

Constance graduated from the UO in 1930 and entered Berkeley for graduate work under the legendary Willis Linn Jepson, completing his thesis on the genus *Eriophyllum* in 1934. During that time, he put his knowledge of the Oregon flora to good use when he worked several summers as a ranger-naturalist at Crater Lake National Park. Upon receipt of his advanced degree he accepted a three-year appointment at Washington State College in Pullman; however, he continued to visit his elderly mentor in Eugene when he traveled home to see his parents.

In 1940 Constance had what was undoubtedly his final meeting with Henderson when both attended a meeting of the American Association for the Advancement of Science in Seattle that June. At that time, Constance introduced Henderson to Jepson. The two men had corresponded for many years, but this was their first and only meeting. Henderson died two years later at the age of 89. Constance had returned to Berkeley in 1937 and remained there for the impressive career in botany and administration outlined

above. Jepson died in 1946 but not before appointing Constance a Trustee of the Jepson Herbarium. It has been reported by Bruce Baldwin that until close to the end of his life, Lincoln Constance, like Henderson, worked long hours in the Herbarium at least six days a week. It is universally agreed that he was both a scholar and a gentleman, words which have also been applied to his friend and role model, Louis F. Henderson of Oregon. 

Errata: In our "Did you know" column in February it was erroneously stated that meadow knapweed was found at Linnton on the Columbia. The plant in question was black knapweed and Linnton is on the Willamette River. We apologize for the errors.

Thanks

Thanks to the Native Plant Society of Oregon and its Siskiyou Chapter for their generous support.

The following donors have recently contributed via the OSU foundation, Friends of the Flora and NPSO membership pledges: Dan Bates, Mariana Bornholdt, Richard Brock, Ken & Henny Chambers, Nancy J. Chapman, Jim Duncan & Elaine Plaisance, Daryl Ehrensing, Clint Emerson, Eileen Flory, Mary Garrard, Karen Gray, Bonnie Hall, Margot Hamilton, Dave Herndon, Linda Hardison & Scott Sundberg, Rex Igo, John Koenig, Jaya Conser Lapham, Kenneth & Robin Lodewick, Rhoda & Glen Love, Susan MacKinnon, Alex & Lillian Maksymowicz, Vernie J. McGowan, Pam McGraw, Jeanne & Frank Moore, Bruce Newhouse, Joan & Alex Ojerio, Edith Parker, Marion Peterson, Portland Garden Club, Mark Quistad, Ruth Roberts, Ian Shackelford, Pat Sherman, Charlene Simpson, Veva Stansell, Frances Stilwell, Kareen Sturgeon, Penny Tanlund, Kelli Van Norman, Beth Walton, James Zanzot.

Thanks to the following who have helped by volunteering or sending in species lists or specimens: George W. Argus, Emily Ashley, Mary Barkworth, Connie Battaile, Barbara Halliday, Glenn Halliday, Noel Holmgren, Patricia Holmgren, Anne Jaster, Ali Kelly, Kay Kinsley, Ruth McFarlane, Megan Miller Morgan, Gene Newcomb, Joan Ojerio, Bob Oliver, Judy Oliver, Mark Quistad, Don Roberts, John Roth, Margie Willowmoon, Barbara Wilson.

Would you like to make a donation?

Tax-deductible donations can be made to the Oregon Flora Project by sending a check made out to the Oregon State University Foundation to Scott Sundberg at the address on this page. Please note on the check that it is for the Oregon Flora Project. Many thanks.

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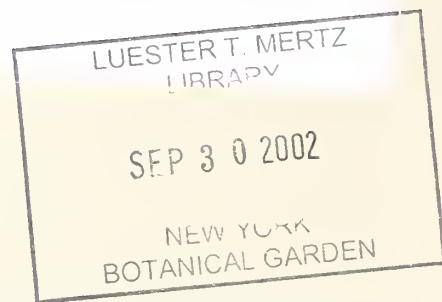


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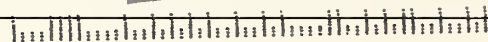
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Did you know?

- Lincoln Constance was a naturalist at Crater Lake during the summers of 1931 and 1932 and published various "Nature Notes" about Park plants. There he had his first experience as a lecturer, addressing guests in front of the huge stone fireplace at Crater Lake Lodge. Sixty years later he recalled that as the fire grew hotter the tempo of his spiel accelerated!
- Constance was first introduced to the Park by Frederick Wynd (1904-1987), another Henderson student who worked there from 1925-1929. Wynd published a number of articles on the botany of the Park and later became an administrator at the University of Oregon. Wynd's papers have recently been acquired by the OSU Herbarium.
- Here is the Crater Lake website where readers can see all the "Nature Notes" written by Lincoln Constance when he worked at the National Park.

<http://www.nps.gov/crla/notes/nn-title.htm>



Oregon specimens with locality coordinates.

The OSU Herbarium database currently has complete label data from over 40,000 specimens. We have added mapping coordinates for 16,771 of these, as shown above.



OREGON FLORA

Newsletter

VOLUME 8, NUMBER 3

OREGON STATE UNIVERSITY

OCTOBER 2002

Gene Newcomb: honored volunteer

by Thea Cook

The Oregon Flora Project has benefited tremendously from volunteers over the years. As a result of "Volunteer Tuesdays," a number of volunteers have provided hundreds of hours of assistance. Although all of these folks deserve hero status, especially those who have made volunteering a part of their regular schedule, we have decided to honor Gene Newcomb in this issue for his determination and meticulous attention to detail.

Gene is a tall, slender fellow with a ready smile who always brings his old red mug whose handle is fastened with duct tape. We were thrilled when he approached us with an interest in the Flora Project a few months ago because of his great reputation in the department. Gene is best known for his 23-year stint as the Extension Nematologist (a person who studies nematodes) at the Plant Pathology Clinic on campus.

Gene graduated from UC Berkeley in 1960 with a PhD in Botany after having studied geographic variation in knob cone pine (*Pinus attenuata*). It was there that he worked in a herbarium for the first time. In the mid-1990s, Gene worked down the hall from Scott Sundberg at OSU, and learned of a project to enter herbarium specimen label information from Oregon collections into a database (including habitat, location, collectors and more). Inspired by the potential power of this information once gathered, Gene determined that upon retirement he would apply himself to assist with this goal and contribute to the creation of a new Flora of Oregon.

Gene's analytical attention, determination to plow through tasks, and good humor have been a great contribution to the project. And none of the student workers mind his donations of sweets to the candy jar either! Hats off to Gene Newcomb. 🌱



Photo: Thea Cook

Gene Newcomb enjoying the herbarium.

Take part in our new Challenge Drive!

by Linda Hardison,

Friends of the Oregon Flora Project

Let me tell you about a new opportunity for you to help maintain the momentum of the Oregon Flora Project. Up to \$12,500 in donations made by you, our loyal supporters, through January 10, 2003 will be doubled thanks to a challenge from an anonymous donor and the Native Plant Society of Oregon.

Sensing the vitality of the Oregon Flora Project and recognizing the critical need for our new Flora, our generous donor has offered \$10,000 in matching funds for this challenge. Aware of the overwhelming support received during our year-2000 drive — when our supporters contributed over \$20,000 to match a similar challenge — our donor has left open the possibility of adding more matching funds if the \$10,000 goal is reached before the January 10 deadline!

NPSO lends its support to this campaign by dedicating \$2,500 to bring the amount of the challenge up to \$12,500. This gives us a wonderful opportunity to begin next year's work on the Flora of Oregon with more than \$25,000 in gifts and matching funds! The details of the year-2002 Challenge are simple:

- (1) All contributions postmarked by January 10, 2003 will be doubled. Because the deadline extends into the new year, you have the opportunity to contribute twice if you wish, as your tax-deductible gifts can be applied to two calendar years.
- (2) Checks should be made out to NPSO, with "Oregon Flora Project Challenge" on the memo line, and mailed to: Friends of the Oregon Flora Project, PO Box 402, Corvallis, OR 97339-0402.
- (3) Alternatively, if you wish, your check may be made out to the OSU Foundation (memo to "Oregon Flora Project") and mailed to the same address. All funds go to the Flora Project, no matter which designee you choose.

As you peruse this issue of the *Oregon Flora Newsletter*, you will find articles by Scott Sundberg, Kenton Chambers, Thea Cook, and Ann Willyard which convey the enthusiasm, the dedication, and the progress that defines the Oregon Flora Project. This is an exciting time for all of us working on the Flora of Oregon. The new challenge is your opportunity to share in this excitement. Please be generous. 🌱

Summer herbarium databasing a success

By Thea Cook and Ann Willyard

Herbaria are typically quiet, thoughtful places, museums dedicated to solitary study. This summer, the OSU Herbarium was transformed into a bustling beehive of activity. With funding from BLM, our goal was to search the entire herbarium, selecting one specimen from each taxon for each Oregon county to enter into the database.

Summer began with a rush to hire 12 students (for a team of 20) with skills ranging from plant taxonomy to editing and the goal of meticulously entering over 20,000 new records into our herbarium specimen database. We fretted over the number of workers needed to accomplish this tremendous task and hoped they were ready to pay careful attention to the elaborate data entry protocol, not to mention persevere through the duration of the summer! We could not have anticipated our good fortune. These stellar students rose to the occasion and even surpassed our expectations. We fought the heat (most work areas are not air conditioned), power outages, a tight deadline, and we won.

Erythronium oregonum logo and masthead designed by Tanya Harvey.

The Oregon Flora Newsletter is published three times a year by the Oregon Flora Project and the Oregon State University Herbarium. The Editor is Rhoda Love and Production Assistants are A. Paige Kruger and Tyler S. Norby.

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Who are these herbarium heroes? Half of our crew are Botany and Plant Pathology majors while most others are studying Zoology, Environmental Science or Resource Management. We were very pleased to harbor a convert to Botany and Plant Pathology, Lacey Yarbrough. Experienced workers like Stephen Meyers, John Schenk, Carl Wiese and Steve Ziemak became responsible trainers of summer hires. Other dedicated workers of honorable mention are Bailey Edgley, Paige Kruger and Kate Norman, whose spirit, willingness to learn and ability with special software programs was highly appreciated. Local KBVR radio show hosts, Dr. Soul (a.k.a. Tyler Norby) and Prof. Funk (a.k.a. Andy Needham), also joined our team. They arrived early every day to stake out their workstations in "the cave" (a small back room of the herbarium). Tyler became so dedicated to the project that when he did not finish an assignment on his last day, he arrived the next morning (a Saturday) to complete his work in pajamas and a bathrobe! Another very dedicated worker, John Schenk, upon hearing of our desire to reach the 50 thousandth database record before a databasing milestone party, took it upon himself to ensure we reached our goal over the weekend. The rate of activity in our confined herbarium space called for crowd control as students waited in line to access herbarium cabinets. In the end, herbarium visitors, George Argus and Pat and Noel Holmgren among them, seemed energized by the OSU Herbarium experience. Noel Holmgren said that the New York Botanical Garden Herbarium seemed strangely quiet when he returned home.

The summer was filled with blossoming relationships between people of vastly different ages and backgrounds. Students with abundant computer skills learned how to lift and carry fragile old specimens from volunteers who have handled specimens for more than 50 years, but who might need help reaching the upper shelves. Ruth McFarland quickly became an honorary grandmother to several students, as well as an inspiration when she finished labeling her life's collections for donation to various herbaria. Richard Halse occasionally gathered eager students to show them some unique feature of

See Database, page 18



Photo: Whitney Ziemak

Some members of the summer databasing team. Top row: Kate Norman, Scott and Matthew Sundberg, Linda Hardison, Ann Willyard, Tyler Norby, Jason Alexander, John Schenk, Basho Perry, Stephen Meyers. Bottom Row: Bailey Edgley, Thea Cook, Aaron Liston (Herbarium Director), and Steve Ziemack

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Thomas Howell Discovers *Calyptridium monospermum*

by Kenton L. Chambers

In a previous issue of this Newsletter, I mentioned that the genus name *Spraguea*, used in *Flora of the Pacific Northwest* and other references, should be replaced by the older name *Calyptridium*. The most common representative of the genus in Oregon is *C. umbellatum* (Torr.) Greene (pussypaws), a species discovered by the explorer John Charles Fremont and named as *Spraguea umbellata* by John Torrey in 1853. The pioneer Oregon botanist, Thomas Howell, seems to have had a special interest in this genus, and in the family Portulacaceae to which it belongs. One of Howell's few (if not only) scientific "papers," published in 1893 in the botanical journal *Erythea* (Willis Linn Jepson, editor), dealt with this family. The paper was titled "A Rearrangement of American Portulacaceae," and it was quite influential in taxonomic treatments of the family—especially as to Howell's interpretation of *Claytonia* and *Montia*—even as late as the 1970s (see Peck's *Manual*, Munz & Keck's *A California Flora*, and Hitchcock's *Flora of the Pacific Northwest*). In this paper, Howell proposed the generic name *Oreobroma* (meaning "food of the mountains") for all *Lewisia* species except the type species, *L. rediviva*, and he described a new species, *Montia rubra*, which we now recognize as a valid species of *Claytonia*. Another new species was *Spraguea multiceps* Howell, from Mt. Hood and Mt. Adams; however, its description refers to the common, widespread form of *Calyptridium*

umbellatum with an underground, multiple-branched perennial caudex. In such plants, each caudex branch produces a rosette of succulent leaves and a single terminal inflorescence. His description of *Spraguea umbellata*, on the other hand, says "(b)ennial; stems all arising from a single crown....Siskiyou and Sierra Nevada Mountains," the word "stems" referring to numerous separate inflorescences.

While examining herbarium specimens for a treatment of *Calyptridium* for the Oregon Vascular Plant Checklist, I came upon an historical document—the draft of a letter from Thomas Howell to Asa Gray—which helps explain Howell's interpretation of "*Spraguea umbellata*" and his publication of the new name *Spraguea multiceps*. The draft is written in pencil on poor quality ledger paper; it was attached to an herbarium sheet having the

printed label "*Spraguea umbellata*, Torr., Siskiyou mountains near Waldo, Thos. Howell No. 1339, July 1887." The letter is addressed to "Dr. Gray" and is dated Oct. 9, 1887. It describes two collections of *Spraguea* that Howell was sending to Gray for his determination, one from Mt. Hood and one from the Siskiyou. Howell had been a frequent correspondent of Gray's, providing field observations about various Portulacaceae. In his letter, Howell describes the peculiar features of his Siskiyou Mountains collection, differentiating it from the *Spraguea* species that he knew from Mt. Hood. He then makes the following request: "If either of these plants is the original *S. umbellata*, please tell me which one it is and give the other a name—name both of them if they are not that plant."

Sadly, Asa Gray had a stroke on November 28, 1887, and died just two months later. It is quite unlikely, therefore, that he could have replied to Howell's letter. From subsequent events it is clear that, by 1893, Howell decided on his own that the Mt. Hood and Mt. Adams plants were *not* what Torrey had described as *Spraguea umbellata*, and hence they should be given the new name *S. multiceps*. His Siskiyou collection, he therefore assumed, was the same species as Torrey's *S. umbellata*, whose type specimen had come from the Sierra Nevada of northern California. But today our interpretation is just the reverse; *S. multiceps* is the same as *S. umbellata*, while the Siskiyou plant is a different species! What is the explanation?

The answer is this: In his Siskiyou Mountains collection, Thomas Howell had discovered a new undescribed species, but

because Dr. Gray had died before he could advise Howell what the "true" *S. umbellata* was, Howell did not correctly interpret his find. Only later, in 1895, was this new species given the name *Calyptridium monospermum* by E. L. Greene, the type collection coming from Inyo County, California. Unfortunately, further confusion arose, because Greene erroneously described the species as an annual, with only one seed per capsule (not perennial and having 1-8 seeds, as is the case). Not until 1975 was the confusion between these two species finally clarified (W. F. Hinton, Systematics of the *Calyptridium umbellatum* complex [Portulacaceae]. *Brittonia* 27:197-208).

In Oregon, *Calyptridium monospermum* is known from Curry, Josephine, Douglas, Jackson, Klamath, and Lake counties; it ranges south through California all the way to



Specimen of *Calyptridium monospermum* collected by Lincoln Savage in Jackson Co., Oregon, May 13, 1934. The label reads, "This plant grows in sandy pumice flats at high altitudes, Union Creek on Crater Lake Road." Note that none of the inflorescence stems arise from the central apex of the rosette of basal leaves.

northern Baja California. Its essential differences from *C. umbellatum* are well illustrated by the accompanying image of a specimen from Union Creek, Jackson County: (1) the inflorescence scapes arise from the axils of leaves below the single stem apex, and (2) there are small leafy bracts on the scapes. A third difference, not shown, is that throughout the life of the plant, the caudex never branches (unless its growing point is damaged). The opposing traits of *C. umbellatum* are: (1) each inflorescence scape is terminal, from the center of a leaf rosette, (2) bracts on the scapes are smaller or absent, and (3) the caudex is branched, with a leaf rosette at the tip of each branch.

This involved story would not be complete if I did not add a further complication: these two species may grow together in nature and form hybrids. From herbarium collections, it appears that hybrid plants may have a single caudex with both the terminal, small-bracted inflorescence of *C. umbellatum* and the axillary ones of *C. monospermum*. Such plants are frequent in California; in Oregon, they are found in the vicinity of Crater Lake and elsewhere in Klamath County. In the Cascades north of Douglas County, as well as eastward to the Wallowas, we expect to find only "good" *C. umbellatum*. 🌿

Our new look

by Rhoda Love

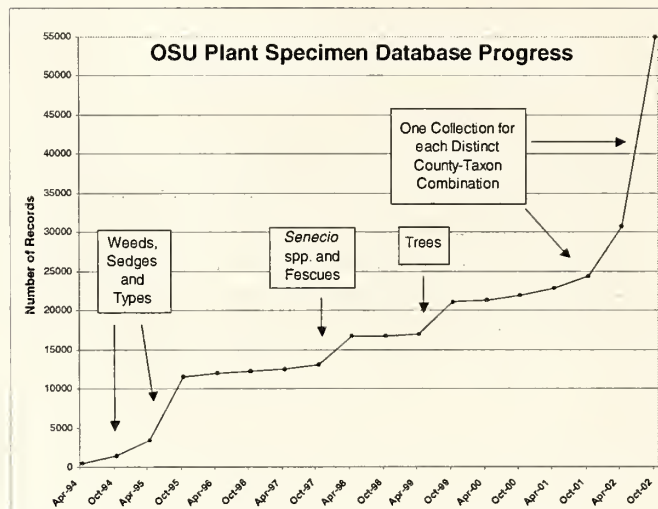
The *Oregon Flora Newsletter* has a new look and the Oregon Flora Project a new logo. With this issue of the newsletter we introduce a new representation of our signature species, *Erythronium oregonum*, Oregon fawn lily or giant fawn lily.

Our new logo and masthead were designed for us by well-known Oregon artist, Tanya Harvey. Tanya lives near Lowell in Lane County and is known to many of us as the Editor of the *Bulletin* of the Native Plant Society of Oregon. She is a designer of cards, posters, and other art work and is also an avid birder and native plant gardener.

In 1995 when the *Oregon Flora Newsletter* was launched we knew we wanted a well-known species with "Oregon" in its name for our logo. The fawn lily seemed the perfect choice, a beautiful and much-loved species which is closely associated with our state. This charming native lily with its handsome mottled leaves was first collected by Archibald Menzies in the spring of 1792. Floras generally give the collecting place as Fort Vancouver, but this cannot be correct as Menzies did not visit the Fort. Scholars now believe the location was most likely Admiralty Inlet north of present-day Seattle, part of the vast Oregon Territory from 1848 to 1853. W. J. Hooker named the flower *Erythronium grandiflorum albiflorum* and Oregon botanist Elmer Ivan Applegate gave it the present name, *Erythronium oregonum*, in 1932, designating a type specimen from Clackamas County.

Our previous logo, which graced the newsletter from 1996 until this year, was drawn for us by Dr. Linda Ann Vorobik, who was Principal Illustrator for *The Jepson Manual*. We thank Tanya Harvey for the new designs and Linda Vorobik for the earlier logo. Both Tanya and Linda are superb artists and we are grateful to both for making their work available to us. We hope newsletter readers enjoy our new look. 🌿

a newly-collected plant. Don Roberts, Glenn and Barbara Halliday, Gene Newcomb, and a number of other volunteers patiently double-checked student work by comparing computer printouts with specimens. Henny Chambers continued annotating in the midst of all of this activity, sharing tidbits of her discoveries about the species she was studying for checklist treatments. Finding a question that needed to be asked of Ken Chambers was a high point for many students, because the answer might include a wonderful story about either the plant, the collector, or Oregon geographical place names.



This chart shows growth of the OSU Herbarium Vascular Plant Specimen Database since its inception in early 1994. The line rises with each new record. A measurement of the number of records (each record represents one herbarium specimen) was made every 6 months. During high rates of data entry, text indicates the specific plant groups databased. Almost 55,000 OSU records have been entered to date.

The pace of work in the herbarium this summer was stimulated on various fronts. When Aaron Liston (OSU Herbarium Director) asked Thea Cook to prepare a chart of records databased over the course of the summer, he never imagined the impact it would have on our group. A new graph was produced each week to chart progress toward our 22,000 record goal. Having learned to write database queries, workers began to check their daily progress and compete with one another for the most new specimen records created in a day. Of course we always stressed quality over quantity, but these competitive botanists were eager for a chance to show their prowess. At every 5,000 record increment we had a lunchtime celebration and speaker. Rhoda Love offered a slide presentation on Oregon plant collectors, which gave us all higher appreciation for botanists, like William Cusick and Thomas Jefferson Howell, whose handwritten labels can sometimes be a challenge to decipher. Linda Hardison fueled workers' spirits with a pertinent introduction to the need for a new comprehensive flora for this state.

All good things must come to an end. The Oregon county project was completed for the September deadline, and fortunately we were able to keep much of our highly esteemed databasing crew for more Flora Project work this fall. Additionally our team of dedicated volunteers, critical to our success, stands ready to tackle more projects. Whatever is next, we are ready! 🌿

Project news

by Scott Sundberg

The summer of 2002 will long be remembered as a turning point in the history of the Oregon Flora Project. Significant gains have been made in many areas. Funding from the Bureau of Land Management, Weyerhaeuser (Willamette Industries), the Native Plant Society of Oregon, The National Science Foundation, and private donations supported 28 part- and full-time employees. Volunteers, including five individuals who came on "Volunteer Tuesdays," allowed us to make even more progress.

At the end of September Ann Willyard, Thea Cook and I submitted a report and database to the BLM with lists of all known plant taxa (species, subspecies and varieties) for all 36 Oregon counties. The lists were derived by reviewing 342,000 records from twenty sources, including herbarium specimens at OSU and eight other herbaria, species lists, photographs, and published literature.

County checklist work is underway for Curry, Jackson, Josephine, Lane, Polk, and Yamhill counties. If you are interested in starting a project for another county let me know and you'd be welcome to use our list as a starting point!

During the summer we completed work on the prototype of a Rare Plant Guide. Fifty "fact sheets" were prepared. Each sheet summarizes information on a rare western Oregon species and has a distribution map, species description, line drawings, photos, habitat, best survey times, and identification hints. We are now editing the fact sheets and plan to make them available for viewing and printing over the Internet some time this fall.

The online photo gallery is under development. Sherry Pittam has designed a web page and we are gathering photographs with an emphasis on members of the heath family (Ericaceae) and rock garden plants. By the end of November we plan to make this accessible to the public.

Linda Hardison and I have been working on a database of morphological characters, which will become the core of the identification keys in our planned "Personal Digital Field Guide." We are focusing on members of the heath family (Ericaceae) for now, but eventually will include all Oregon species. This task requires establishing many of the ground

rules for the Oregon Flora, including making decisions on terminology. I am now working on a list of characters and a glossary.

Over the next couple of months we will put several things online through our website, www.oregonflora.org, so please drop by for a visit! 🌱

Thanks

The following donors have recently contributed via the OSU Foundation, Friends of the Flora and NPSO membership pledges: Native Plant Society of Oregon, NPSO Umpqua Valley Chapter, Linda Boyer, Gretchen & Denis Camaby, Dave Garcia, Clay Gautier & Gail Baker, Pat & Noel Holmgren, Mary H. Hough, Robert Hubert, Jim Johnson, Kenneth & Robin Lodewick, Rhoda & Glen Love, Charlene Simpson, James P. Smith, Veva Stansell, George & Emily Swan, and Charles Trainer.

Thanks to the following who have helped by volunteering or sending in species lists or specimens: Doug Barbe, Jim Duncan, Barbara & Glenn Halliday, Don Mansfield, Megan Miller Morgan, Gene Newcomb, Joan Ojerio, Don Roberts, and Suzanne Stillwaggon.

Thanks to the following for giving permission to use photographs and illustrations: Institute of Applied Ecology, Oregon Dept. of Agriculture, Mark Egger, Steve Gisler, Tanya Harvey, Phillip Hays, Bill Hopkins, Vernon Marttala, Julie Kierstead Nelson, Bruce Newhouse, Linda Vorobik, and Karen Wallace.

We would like to give a special thanks to Glenn Halliday for donating 10,360 slides to the Oregon Flora Project!

Lane County Checklist Note: A page of additions and deletions to the Checklist published last spring will soon be posted at www.EmeraldNPSO.org. Hard copies of the updates will be available at Emerald Chapter NPSO meetings and events, and published in the February *Oregon Flora Newsletter*.

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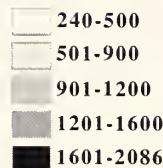
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Did you know?

- The OSU Herbarium web page now has 47,000+ specimens that can be searched by scientific name, collector, collection date, or Oregon county: www.orst.edu/dept/botany/herbarium/db/vasc_plant.html. This represents 30% of the non-cultivated Oregon vascular plant specimens in the OSU herbarium.
- Currently, no species has been reported from all 36 Oregon counties, but 4 are known from 35 counties each: *Achillea millefolium* (yarrow; native to Oregon; not yet reported from Gilliam Co.), *Cornus sericea* (red osier dogwood; native to Oregon; not yet reported from Morrow Co.), *Erodium cicutarium* (red-stemmed filaree; not native to Oregon; not yet reported from Columbia Co.), *Galium aparine* (stickywilly, cleavers; native to Oregon; not yet reported from Columbia Co.).
- In a recent survey of a sample of OSU Herbarium specimen collection dates, we discovered a great distinction between collecting eras. Whereas 70% of the specimens were collected between 1910 and 1959 and 10% were made prior to 1910, only 20% were collected between 1960 and 2000.



Number of species known from each Oregon county

This map is shaded to show how many taxa have been reported to the Oregon Flora Project for each county. The numbers include vouchered collections from herbaria as well as other reliable reports. This large data collection contains over 36,000 species/county occurrences!